Disulfur monoxide

Inchi: InChI=1S/OS2/c1-3-2
InchiKey: TXKMVPPZCYKFAC-UHFFFAOYSA-N
Formula: OS2
SMILES: O=S=S
Mol. weight [g/mol]: 80.13
CAS: 20901-21-7

Physical Properties

Property code	Value	Unit	Source
ea	1.88 ± 0.01	eV	NIST Webbook
gf	-130.71	kJ/mol	Joback Method
hf	-95.58	kJ/mol	Joback Method
hfus	11.00	kJ/mol	Joback Method
hvap	34.84	kJ/mol	Joback Method
ie	10.62	eV	NIST Webbook
ie	10.58 ± 0.01	eV	NIST Webbook
ie	10.58 ± 0.01	eV	NIST Webbook
ie	10.30 ± 0.10	eV	NIST Webbook
ie	10.52	eV	NIST Webbook
ie	10.53 ± 0.02	eV	NIST Webbook
ie	10.58 ± 0.01	eV	NIST Webbook
ie	10.52	eV	NIST Webbook
log10ws	1.23		Crippen Method
logp	-0.339		Crippen Method
mcvol	45.130	ml/mol	McGowan Method
pc	9481.11	kPa	Joback Method
tb	325.06	K	Joback Method
tc	524.87	K	Joback Method
tf	193.38	K	Joback Method
vc	0.162	m3/kmol	Joback Method

Temperature Dependent Properties

Property code	Value	Unit	Temperature [K]	Source

cpg	52.17	J/mol×K	325.06	Joback Method
cpg	54.21	J/mol×K	358.36	Joback Method
cpg	55.91	J/mol×K	391.66	Joback Method
cpg	57.30	J/mol×K	424.97	Joback Method
cpg	58.40	J/mol×K	458.27	Joback Method
cpg	59.25	J/mol×K	491.57	Joback Method
cpg	59.87	J/mol×K	524.87	Joback Method

Sources

Crippen Method:	http://pubs.acs.org/doi/abs/10.1021/ci990307l
Crippen Method:	https://www.chemeo.com/doc/models/crippen_log10ws
Joback Method:	https://en.wikipedia.org/wiki/Joback_method
McGowan Method:	http://link.springer.com/article/10.1007/BF02311772
NIST Webbook:	http://webbook.nist.gov/cgi/cbook.cgi?ID=C20901217&Units=SI

Legend

cpg:	Ideal gas heat capacity
ea:	Electron affinity
gf:	Standard Gibbs free energy of formation
hf:	Enthalpy of formation at standard conditions
hfus:	Enthalpy of fusion at standard conditions
hvap:	Enthalpy of vaporization at standard conditions
ie:	Ionization energy
log10ws:	Log10 of Water solubility in mol/l
logp:	Octanol/Water partition coefficient
mcvol:	McGowan's characteristic volume
pc:	Critical Pressure
tb:	Normal Boiling Point Temperature
tc:	Critical Temperature
tf:	Normal melting (fusion) point
vc:	Critical Volume